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277/74, 277/84, 277/24, 471/04

(SUZUKI,Nobuhiro) [JP/JP]; 〒562-0001 大阪府 箕面市 箕面 4 丁目 1 6-6 1 Osaka (JP). 原田 征隆 (HARADA,Masataka) [JP/JP]; 〒305-0046 茨城県 つくば市 東 2 丁目 1 4-5-2 0 1 Ibaraki (JP). 安間 常雄 (YASUMA,Tsuneo) [JP/JP]; 〒567-0011 大阪府 茨木市 高田町 2 0-5 Osaka (JP).

(21) 国際出願番号: PCT/JP2003/014139

(74) 代理人: 高橋 秀一, 外(TAKAHASHI,Shulchi et al.); 〒532-0024 大阪府 大阪市 淀川区 十三本町 2 丁目 1 7 番 8 5 号 武田薬品工業株式会社大阪工場内 Osaka (JP).

(22) 国際出願日: 2003 年 11 月 6 日 (06.11.2003)

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(26) 国際公開の言語: 日本語

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特願2002-324632 2002 年 11 月 8 日 (08.11.2002) JP
特願2003-16889 2003 年 1 月 27 日 (27.01.2003) JP
特願2003-153986 2003 年 5 月 30 日 (30.05.2003) JP

(81) 指定国 (国内): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(71) 出願人 (米国を除く全ての指定国について): 武田薬品工業株式会社 (TAKEDA CHEMICAL INDUSTRIES, LTD.) [JP/JP]; 〒541-0045 大阪府 大阪市 中央区道修町 4 丁目 1 番 1 号 Osaka (JP).

(84) 指定国 (広域): ARIPO 特許 (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), ユーラシア特許 (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), ヨーロッパ特許 (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI 特許 (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(72) 発明者; および

(75) 発明者/出願人 (米国についてののみ): 深津 考司 (FUKATSU,Kohji) [JP/JP]; 〒651-1212 兵庫県 神戸市 北区筑紫が丘 5 丁目 8-4 Hyogo (JP). 佐々木 忍 (SASAKI,Shinobu) [JP/JP]; 〒662-0865 兵庫県 西宮市 神垣町 5-2 1-4 0 9 Hyogo (JP). 日沼 州司 (HINUMA,Shuji) [JP/JP]; 〒305-0821 茨城県 つくば市 春日 1 丁目 7-9-1 4 0 2 Ibaraki (JP). 伊藤 康明 (ITO,Yasuaki) [JP/JP]; 〒300-0832 茨城県 土浦市 桜ヶ丘町 3 6-1 6 Ibaraki (JP). 鈴木 伸宏

添付公開書類:

— 国際調査報告書

2 文字コード及び他の略語については、定期発行される各 PCT ガゼットの巻頭に掲載されている「コードと略語のガイダンスノート」を参照。

(54) Title: RECEPTOR FUNCTION CONTROLLING AGENT

(54) 発明の名称: 受容体機能調節剤

(57) Abstract: A GPR40 receptor function controlling agent which contains a compound having an aromatic ring and a group capable of releasing a cation and is useful as a insulin secretion promoting agent or a preventive/remedy for diabetes, etc.

(57) 要約: 芳香環およびカチオンを放出しうる基を含有する化合物を含有してなる、本発明の G P R 4 0 受容体機能調節剤は、インスリン分泌促進薬や糖尿病などの予防・治療薬として有用である。



WO 2004/041266 A1

PCT REQUEST

3119WO0P

0	For receiving Office use only	
0-1	International Application No.	
0-2	International Filing Date	
0-3	Name of receiving Office and "PCT International Application"	
0-4	Form - PCT/RO/101 PCT Request	
0-4-1	Prepared using	PCT-EASY Version 2.92 (updated 01.07.2003)
0-5	Petition The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty	
0-6	Receiving Office (specified by the applicant)	Japan Patent Office (RO/JP)
0-7	Applicant's or agent's file reference	3119WO0P
I	Title of invention	RECEPTOR FUNCTION REGULATOR
II	Applicant	
II-1	This person is:	applicant only
II-2	Applicant for	all designated States except US
II-4	Name	TAKEDA CHEMICAL INDUSTRIES, LTD.
II-5	Address:	1-1, Doshomachi 4-chome, Chuo-ku, Osaka-shi, Osaka 541-0045 Japan
II-6	State of nationality	JP
II-7	State of residence	JP
III-1	Applicant and/or inventor	
III-1-1	This person is:	applicant and inventor
III-1-2	Applicant for	US only
III-1-4	Name (LAST, First)	FUKATSU, Kohji
III-1-5	Address:	8-4, Tsukushigaoka 5-chome, Kita-ku, Kobe-shi, Hyogo 651-1212 Japan
III-1-6	State of nationality	JP
III-1-7	State of residence	JP

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III-2	Applicant and/or inventor	
III-2-1	This person is:	applicant and inventor
III-2-2	Applicant for	US only
III-2-4	Name (LAST, First)	SASAKI, Shinobu
III-2-5	Address:	5-21-409, Kamigaki-cho, Nishinomiya-shi, Hyogo 662-0865 Japan
III-2-6	State of nationality	JP
III-2-7	State of residence	JP
III-3	Applicant and/or inventor	
III-3-1	This person is:	applicant and inventor
III-3-2	Applicant for	US only
III-3-4	Name (LAST, First)	HINUMA, Shuji
III-3-5	Address:	7-9-1402, Kasuga 1-chome, Tsukuba-shi, Ibaraki 305-0821 Japan
III-3-6	State of nationality	JP
III-3-7	State of residence	JP
III-4	Applicant and/or inventor	
III-4-1	This person is:	applicant and inventor
III-4-2	Applicant for	US only
III-4-4	Name (LAST, First)	ITO, Yasuaki
III-4-5	Address:	36-16, Sakuragaoka-machi, Tsuchiura-shi, Ibaraki 300-0832 Japan
III-4-6	State of nationality	JP
III-4-7	State of residence	JP
III-5	Applicant and/or inventor	
III-5-1	This person is:	applicant and inventor
III-5-2	Applicant for	US only
III-5-4	Name (LAST, First)	SUZUKI, Nobuhiro
III-5-5	Address:	16-61, Mino 4-chome, Mino-shi, Osaka 562-0001 Japan
III-5-6	State of nationality	JP
III-5-7	State of residence	JP
III-6	Applicant and/or inventor	
III-6-1	This person is:	applicant and inventor
III-6-2	Applicant for	US only
III-6-4	Name (LAST, First)	HARADA, Masataka
III-6-5	Address:	14-5-201, Higashi 2-chome, Tsukuba-shi, Ibaraki 305-0046 Japan
III-6-6	State of nationality	JP
III-6-7	State of residence	JP

III-7	Applicant and/or inventor	
III-7-1	This person is:	applicant and inventor
III-7-2	Applicant for	US only
III-7-4	Name (LAST, First)	YASUMA, Tsuneo
III-7-5	Address:	20-5, Takada-cho, Ibaraki-shi, Osaka 567-0011 Japan
III-7-6	State of nationality	JP
III-7-7	State of residence	JP
IV-1	Agent or common representative; or address for correspondence The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:	agent
IV-1-1	Name (LAST, First)	TAKAHASHI, Shuichi
IV-1-2	Address:	c/o Osaka Plant of TAKEDA CHEMICAL INDUSTRIES, LTD. 17-85, Jusohonmachi 2-chome, Yodogawa-ku, Osaka-shi, Osaka 532-0024 Japan
IV-1-3	Telephone No.	03-3278-2235
IV-1-4	Facsimile No.	03-3278-2222
IV-2	Additional agent(s)	additional agent(s) with same address as first named agent
IV-2-1	Name(s)	SEKIGUCHI, Akira
V	Designation of States	
V-1	Regional Patent (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned)	AP: GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW and any other State which is a Contracting State of the Harare Protocol and of the PCT EA: AM AZ BY KG KZ MD RU TJ TM and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT EP: AT BE BG CH&LI CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT RO SE SI SK TR and any other State which is a Contracting State of the European Patent Convention and of the PCT OA: BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG and any other State which is a member State of OAPI and a Contracting State of the PCT

V-2	National Patent (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned)	AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH&LI CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
V-5	Precautionary Designation Statement In addition to the designations made under items V-1, V-2 and V-3, the applicant also makes under Rule 4.9(b) all designations which would be permitted under the PCT except any designation(s) of the State(s) indicated under item V-6 below. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit.	
V-6	Exclusion(s) from precautionary designations	NONE
VI-1	Priority claim of earlier national application	
VI-1-1	Filing date	08 November 2002 (08.11.2002)
VI-1-2	Number	2002-324632
VI-1-3	Country	JP
VI-2	Priority claim of earlier national application	
VI-2-1	Filing date	27 January 2003 (27.01.2003)
VI-2-2	Number	2003-16889
VI-2-3	Country	JP
VI-3	Priority claim of earlier national application	
VI-3-1	Filing date	30 May 2003 (30.05.2003)
VI-3-2	Number	2003-153986
VI-3-3	Country	JP
VI-4	Priority document request The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) identified above as item(s):	VI-1, VI-2, VI-3
VII-1	International Searching Authority Chosen	Japan Patent Office (JPO) (ISA/JP)

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VIII	Declarations	Number of declarations	
VIII-1	Declaration as to the identity of the inventor	-	
VIII-2	Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent	-	
VIII-3	Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application	-	
VIII-4	Declaration of inventorship (only for the purposes of the designation of the United States of America)	-	
VIII-5	Declaration as to non-prejudicial disclosures or exceptions to lack of novelty	-	
IX	Check list	number of sheets	electronic file(s) attached
IX-1	Request (including declaration sheets)	6	-
IX-2	Description (excluding sequence listing part)	404	-
IX-3	Claims	9	-
IX-4	Abstract	1	EZABST00.TXT
IX-5	Drawings	3	-
IX-7a	Sub-total number of sheets	423	
IX-6	Sequence listing part of description	16	-
IX-7	TOTAL	439	
	Accompanying items	paper document(s) attached	electronic file(s) attached
IX-8	Fee calculation sheet	✓	-
IX-9	Original separate power of attorney	✓	-
IX-11	Copy of general power of attorney	✓	-
IX-16	Sequence listing in computer readable form:		
IX-16 (i)	copy submitted for the purposes of international search under Rule 13ter only (and not as part of the international application)	-	1 Diskette
IX-17	PCT-EASY diskette	-	Diskette
IX-18	Other (specified):	Revenue stamps of transmittal fee for receiving office	-
IX-18	Other (specified):	Statement	-
IX-18	Other (specified):	Information such as recording form of flexible disk	-
IX-19	Figure of the drawings which should accompany the abstract		
IX-20	Language of filing of the international application	Japanese	
X-1	Signature of applicant, agent or common representative		
X-1-1	Name (LAST, First)	TAKAHASHI, Shuichi (seal)	

PCT REQUEST

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X-2	Signature of applicant, agent or common representative	
X-2-1	Name (LAST, First)	SEKIGUCHI, Akira (seal)

FOR RECEIVING OFFICE USE ONLY

10-1	Date of actual receipt of the purported international application	
10-2	Drawings:	
10-2-1	Received	
10-2-2	Not received	
10-3	Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application	
10-4	Date of timely receipt of the required corrections under PCT Article 11(2)	
10-5	International Searching Authority	ISA/JP
10-6	Transmittal of search copy delayed until search fee is paid	

FOR INTERNATIONAL BUREAU USE ONLY

11-1	Date of receipt of the record copy by the International Bureau	
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PATENT COOPERATION TREATY

PCT

NOTIFICATION OF RECEIPT OF
RECORD COPY

(PCT Rule 24.2(a))

From the INTERNATIONAL BUREAU

To:

TAKAHASHI, Shuichi
c/o Osaka Plant of TAKEDA CHEMICAL
INDUSTRIES, LTD.
17-85, Jusohonmachi 2-chome,
Yodogawa-ku
Osaka-shi, Osaka 532-0024
Japan

Date of mailing (day/month/year) 10 December 2003 (10.12.03)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference 3119WO0P	International application No. PCT/JP03/14139

The applicant is hereby notified that the International Bureau has received the record copy of the international application as detailed below.

Name(s) of the applicant(s) and State(s) for which they are applicants:

TAKEDA CHEMICAL INDUSTRIES, LTD. (for all designated States except US)
FUKATSU, Kohji et al (for US)

International filing date : 06 November 2003 (06.11.03)
Priority date(s) claimed : 08 November 2002 (08.11.02)
27 January 2003 (27.01.03)
30 May 2003 (30.05.03)

Date of receipt of the record copy
by the International Bureau : 27 November 2003 (27.11.03)

List of designated Offices :

AP : GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW
EA : AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
EP : AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR
OA : BF, BJ, CF, CG, CI, CM, GA, GN, GO, GW, ML, MR, NE, SN, TD, TG
National : AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ,
EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU,
LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ,
TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Authorized officer:

Lazar Joseph PANAKAL (Fax 338 9090)

Facsimile No. (41-22) 338.90.90

Telephone No. (41-22) 338 9634

Continuation of Form PCT/IB/301

NOTIFICATION OF RECEIPT OF RECORD COPY

Date of mailing (day/month/year) 10 December 2003 (10.12.03)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference 3119WO0P	International application No. PCT/JP03/14139

ATTENTION

The applicant should carefully check the data appearing in this Notification. In case of any discrepancy between these data and the indications in the international application, the applicant should immediately inform the International Bureau.

In addition, the applicant's attention is drawn to the information contained in the Annex, relating to:

- ☒ time limits for entry into the national phase - see updated important information (as of April 2002)
- ☒ confirmation of precautionary designations (if applicable)
- ☒ requirements regarding priority documents (if applicable)

A copy of this Notification is being sent to the receiving Office and to the International Searching Authority.

INFORMATION ON TIME LIMITS FOR ENTERING THE NATIONAL PHASE

The applicant is reminded that the "national phase" must be entered before each of the designated Offices indicated on the cover sheet of this Notification by paying national fees and furnishing translations, as prescribed by Articles 22 and 39 and the applicable national laws. In addition, the applicant may also have to comply with other special requirements applicable in certain Offices. It is the applicant's responsibility to ensure the necessary steps to enter the national phase are taken in a timely fashion. Most Offices do not issue reminders to applicants in connection with the entry into the national phase.

The applicable time limit for entering the national phase will, subject to what is said in the following paragraph, be **30 MONTHS** from the priority date, not only in respect of any elected Office where a demand for international preliminary examination is filed before the expiration of 19 months from the priority date (see Article 39(1)), but also in respect of any designated Office, in the absence of filing of such demand, where Article 22(1) as modified with effect from 1 April 2002 applies in respect of that designated Office. For further details, see PCT Gazette No. 44/2001 of 1 November 2001, pages 19926, 19932 and 19934, as well as the PCT Newsletter, October and November 2001 and February 2002 issues.

In practice, time limits other than the 30-month time limit will continue to apply, for various periods of time, in respect of certain designated or elected Offices. For regular updates on the applicable time limits (20, 21, 30 or 31 months, or other time limit), Office by Office, refer to the PCT Gazette ("Section IV" part published on a weekly basis), to the PCT Newsletter (on a monthly basis) and to the relevant National Chapters in Volume II of the PCT Applicant's Guide (the paper version of which is updated usually twice a year and the Internet version of which is updated usually on a weekly basis). Finally, a cumulative table of all applicable time limits for entering the national phase is available from WIPO's Internet site, via links from various pages the site including those of the Gazette, Newsletter and Guide, at <http://www.wipo.int/pct/en/index.html>.

Information about the requirements for filing a demand for international preliminary examination is set out in the PCT Applicant's Guide, Volume I/A, Chapter IX. Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination (at present, all PCT Contracting States are bound by Chapter II).

CONFIRMATION OF PRECAUTIONARY DESIGNATIONS

This notification lists only specific designations made under Rule 4.9(a) in the request. It is important to check that these designations are correct. Errors in designations can be corrected where precautionary designations have been made under Rule 4.9(b). The applicant is hereby reminded that any precautionary designations may be confirmed according to Rule 4.9(c) before the expiration of 15 months from the priority date (this time limit may not be extended). If it is not confirmed, it will automatically be regarded as withdrawn by the applicant. There will be no reminder and no invitation. Confirmation of a designation consists of the filing of a notice specifying the designated State concerned (with indication of the kind of protection or treatment desired) and the payment of the designation and confirmation fees. The Notice of confirmation and payment must reach the receiving Office within the 15-month time limit.

REQUIREMENTS REGARDING PRIORITY DOCUMENTS

For applicants who have not yet complied with the requirements regarding priority documents, the following is recalled:

Where the priority of an earlier national, regional or international application is claimed, the applicant must submit a copy of the said earlier application, certified by the authority with which it was filed ("the priority document") to the receiving Office (which will transmit it to the International Bureau) or directly to the International Bureau, before the expiration of 16 months from the priority date, provided that any such priority document may still be submitted to the International Bureau before that date of international publication of the international application, in which case that document will be considered to have been received by the International Bureau on the last day of the 16-month time limit (Rule 17.1(a)).

Where the priority document is issued by the receiving Office, the applicant may, instead of submitting the priority document, request the receiving Office to prepare and transmit the priority document to the International Bureau. Such request must be made before the expiration of the 16-month time limit and may be subjected by the receiving Office to the payment of a fee (Rule 17.1(b)).

If the priority document concerned is not submitted to the International Bureau or if the request to the receiving Office to prepare and transmit the priority document has not been made (and the corresponding fee, if any, paid) within the applicable time limit indicated under the preceding paragraphs, any designated State may disregard the priority claim, provided that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within the time limit which is reasonable under the circumstances.

Where several priorities are claimed, the priority date to be considered for the purposes of computing the 16-month time limit is the filing date of the earliest application whose priority is claimed.

PATENT COOPERATION TREATY

PCT

NOTIFICATION CONCERNING
SUBMISSION OR TRANSMITTAL
OF PRIORITY DOCUMENT

(PCT Administrative Instructions, Section 411)

From the INTERNATIONAL BUREAU 受付

To:

04.2.05

知的財産部

TAKAHASHI, Shuichi
c/o Osaka Plant of TAKEDA CHEMICAL
INDUSTRIES, LTD.
17-85, Jusohonmachi 2-chome,
Yodogawa-ku
Osaka-shi, Osaka 532-0024
Japan

Date of mailing (day/month/year) 22 January 2004 (22.01.2004)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference 3119WOOP	
International application No. PCT/JP2003/014139	International filing date (day/month/year) 06 November 2003 (06.11.2003)
International publication date (day/month/year) Not yet published	Priority date (day/month/year) 08 November 2002 (08.11.2002)
Applicant TAKEDA CHEMICAL INDUSTRIES, LTD. et al	

- By means of this Form, which replaces any previously issued notification concerning submission or transmittal of priority documents, the applicant is hereby notified of the date of receipt by the International Bureau of the priority document(s) relating to all earlier application(s) whose priority is claimed. Unless otherwise indicated by the letters "NR", in the right-hand column or by an asterisk appearing next to a date of receipt, the priority document concerned was submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b).
- (If applicable) The letters "NR" appearing in the right-hand column denote a priority document which, on the date of mailing of this Form, had not yet been received by the International Bureau under Rule 17.1(a) or (b). Where, under Rule 17.1(a), the priority document must be submitted by the applicant to the receiving Office or the International Bureau, but the applicant fails to submit the priority document within the applicable time limit under that Rule, the attention of the applicant is directed to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.
- (If applicable) An asterisk(*) appearing next to a date of receipt, in the right-hand column, denotes a priority document submitted or transmitted to the International Bureau but not in compliance with Rule 17.1(a) or (b) (the priority document was received after the time limit prescribed in Rule 17.1(a) or the request to prepare and transmit the priority document was submitted to the receiving Office after the applicable time limit under Rule 17.1(b)). Even though the priority document was not furnished in compliance with Rule 17.1(a) or (b), the International Bureau will nevertheless transmit a copy of the document to the designated Offices, for their consideration. In case such a copy is not accepted by the designated Office as priority document, Rule 17.1(c) provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.

<u>Priority date</u>	<u>Priority application No.</u>	<u>Country or regional Office or PCT receiving Office</u>	<u>Date of receipt of priority document</u>
08 Nove 2002 (08.11.2002)	2002-324632	JP	30 Dece 2003 (30.12.2003)
27 Janu 2003 (27.01.2003)	2003-16889	JP	30 Dece 2003 (30.12.2003)
30 May 2003 (30.05.2003)	2003-153986	JP	30 Dece 2003 (30.12.2003)

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No. (41-22) 338.90.90

Authorized officer

Richard SARMIR (Fax 338 9090)

Telephone No. (41-22) 338 8434

From the INTERNATIONAL BUREAU

PCT

NOTICE INFORMING THE APPLICANT OF THE
COMMUNICATION OF THE INTERNATIONAL
APPLICATION TO THE DESIGNATED OFFICES

(PCT Rule 47.1(c), first sentence)

To:

TAKAHASHI, Shuichi
c/o Osaka Plant of TAKEDA CHEMICAL INDUSTRIES, LTD.
17-85, Jusohonmachi 2-chome, Yodogawa-ku
Osaka-shi, Osaka 532-0024
JAPONDate of mailing (day/month/year)
21 May 2004 (21.05.2004)Applicant's or agent's file reference
3119WO0P

IMPORTANT NOTICE

International application No.
PCT/JP2003/014139International filing date (day/month/year)
06 November 2003 (06.11.2003)Priority date (day/month/year)
08 November 2002 (08.11.2002)

Applicant

TAKEDA CHEMICAL INDUSTRIES, LTD. et al

1. Notice is hereby given that the International Bureau has **communicated**, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this notice:

AU, AZ, BY, CH, CN, CO, DZ, EP, HU, JP, KG, KR, MD, MK, MZ, RU, TM, US

In accordance with Rule 47.1(c), third sentence, those Offices will accept the present notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:

AE, AG, AL, AM, AP, AT, BA, BB, BG, BR, BZ, CA, CR, CU, CZ, DE, DK, DM, EA, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, ID, IL, IN, IS, KE, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MG, MN, MW, MX, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, SC, SD, SE, SG, SK, SL, SY, TJ, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW

The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).

3. Enclosed with this notice is a copy of the international application as published by the International Bureau on 21 May 2004 (21.05.2004) under No. WO 2004/041266

4. **TIME LIMITS for filing a demand for international preliminary examination and for entry into the national phase**

The applicable time limit for entering the national phase will, **subject to what is said in the following paragraph**, be **30 MONTHS** from the priority date, not only in respect of any elected Office if a demand for international preliminary examination is filed before the expiration of **19 months** from the priority date, but also in respect of any designated Office, in the absence of filing of such demand, where Article 22(1) as modified with effect from 1 April 2002 applies in respect of that designated Office. For further details, see *PCT Gazette* No. 44/2001 of 1 November 2001, pages 19926, 19932 and 19934, as well as the *PCT Newsletter*, October and November 2001 and February 2002 issues.

In practice, time limits other than the 30-month time limit will continue to apply, for various periods of time, in respect of certain designated or elected Offices. For regular updates on the applicable time limits (20, 21, 30 or 31 months, or other time limit), Office by Office, refer to the *PCT Gazette*, the *PCT Newsletter* and the *PCT Applicant's Guide*, Volume II, National Chapters, all available from WIPO's Internet site, at <http://www.wipo.int/pc/en/index.html>.

For filing a demand for international preliminary examination, see the *PCT Applicant's Guide*, Volume I/A, Chapter IX. Only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination (at present, all PCT Contracting States are bound by Chapter II).

It is the applicant's sole responsibility to monitor all these time limits.

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Authorized officer

Yoshiko Kuwahara

Facsimile No.+41 22 740 14 35

Facsimile No.+41 22 338 90 90

PCT



INFORMATION CONCERNING ELECTED OFFICES NOTIFIED OF THEIR ELECTION

(PCT Rule 61.3)

From the INTERNATIONAL BUREAU

To:

担当者	S・M			部長

TAKAHASHI, Shuichi
c/o Osaka Plant of TAKEDA CHEMICAL INDUSTRIES, LTD.
17-85, Jusohonmachi 2-chome, Yodogawa-ku
Osaka-shi, Osaka 532-0024
JAPON

Date of mailing (day/month/year) 21 May 2004 (21.05.2004)		
Applicant's or agent's file reference 3119WO0P		IMPORTANT INFORMATION
International application No. PCT/JP2003/014139	International filing date (day/month/year) 06 November 2003 (06.11.2003)	
Priority date (day/month/year) 08 November 2002 (08.11.2002)		
Applicant TAKEDA CHEMICAL INDUSTRIES, LTD. et al		

- The applicant is hereby informed that the International Bureau has, according to Article 31(7), notified each of the following Offices of its election:
EP: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR
National: AU, BG, CA, CN, DE, EG, GB, IL, JP, KR, MN, NI, NO, PG, PL, RO, RU, SK, SY, US
- The following Offices have waived the requirement for the notification of their election; the notification will be sent to them by the International Bureau only upon their request:
AP: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW
EA: AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
OA: BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
National: AE, AG, AL, AM, AT, AZ, BA, BB, BR, BY, BZ, CH, CO, CR, CU, CZ, DK, DM, DZ, EC, EE, ES, FI, GD, GE, GH, GM, HR, HU, ID, IN, IS, KE, KG, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MW, MX, MZ, NZ, OM, PH, PT, SC, SD, SE, SG, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW
- The applicant is reminded that he must enter the "national phase" before the expiration of 30 months from the priority date before each of the Offices listed above. This must be done by paying the national fee(s) and furnishing, if prescribed, a translation of the international application (Article 39(1) (a)), as well as, where applicable, by furnishing a translation of any annexes of the international preliminary examination report (Article 36(3) (b) and Rule 74.1).
 Some offices have fixed time limits expiring later than the above-mentioned time limit. For detailed information about the applicable time limits and the acts to be performed upon entry into the national phase before a particular Office, see Volume II of the PCT Applicant's Guide.
 The entry into European regional phase is postponed until 31 months from the priority date for all States designated for the purposes of obtaining a European patent.

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Authorized officer

Yoshiko Kuwahara

Facsimile No.+41 22 740 14 35

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/14139

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl⁷ A61K31/192, 31/195, 31/216, 31/343, 31/381, 31/401, 31/404,
31/426, 31/428, 31/437, 31/343, A61P1/04, 3/04, 3/06,
3/10, 7/02, 7/10, 9/10, 9/12, 13/12, 15/08, 17/00, 19/02,

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl⁷ A61K31/192, 31/195, 31/216, 31/343, 31/381, 31/401, 31/404,
31/426, 31/428, 31/437, 31/343, A61P1/04, 3/04, 3/06,
3/10, 7/02, 7/10, 9/10, 9/12, 13/12, 15/08, 17/00, 19/02,

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
STN/CAS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, A	WO 03/099793 A1 (Takeda Chemical Industries, Ltd.),	4-7, 10-34,
P, X	04 December, 2003 (04.12.03), Tonyobyō no Chiryō ni Shiyo Dekiru, Hokokan oyobi Cation o Hoshutsu si uru Ki o Yusuru Kagobutsu toshite no Ippanshiki (I) no Kagobutsu (Family: none)	36-38 1-3, 8-9
P, X	WO 03/070686 A1 (Asahi Kasei Corp.), 28 August, 2003 (28.08.03),	10-11, 13-14, 34
P, A	For example, compound Nos. 354, 139 (RN:590147- 09-7, 590412-43-4, 590412-80-9, 59412-44-5, 590 412-81-0) (Family: none)	12, 15-27

☒ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
27 January, 2004 (27.01.04)

Date of mailing of the international search report
10 February, 2004 (10.02.04)

Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/14139

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, X P, A	WO 03/016254 A1 (Ogura Clutch Co., Ltd.), 27 February, 2003 (27.02.03), For example, examples 34(27), 34(42); (RN:499155- 21-4, 499155-36-1, 499155-37-2, 499155-94-1, 499156-04-6, 499156-23-9, 499156-40-0, 499156-45- 5, 499156-53-5, 499156-58-0, 499156-66-0, 99156- 67-1, 499156-68-2) (Family: none)	13-14, 34 15-27
X Y	WO 02/053547 A1 (Takeda Chemical Industries, Ltd.), 11 July, 2002 (11.07.02), Example 66; (compounds described as "excluding..." in Claims 13) & JP 2002-265457 A & EP 1357115 A1	13-14, 34 15-27
A	WO 02/057783 A2 (GLAXO GROUP LTD.), 25 July, 2002 (25.07.02), (Family: none)	1-34, 36-38
P, X	WO 03/068959 A1 (Takeda Chemical Industries, Ltd.), 21 August, 2003 (21.08.03), Claim 120 (Family: none)	1-34, 36-38

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/14139

Box I Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 35

because they relate to subject matter not required to be searched by this Authority, namely:

This claim pertains to methods for treatment of the human body by surgery or therapy, as well as diagnostic methods.

2. ☒ Claims Nos.: 1-12, 28-31, 36-38

because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

See the extra sheet.

3. ☐ Claims Nos.:

because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/14139

Continuation of A. CLASSIFICATION OF SUBJECT MATTER (International Patent Classification (IPC))

Int.Cl⁷ 19/08, 25/00, 25/28, 27/02, 35/00, 37/08, 43/00, C07D277/42, 277/64, 277/74, 277/84, 277/24, 471/04, C07D333/54, 333/56, 209/12, 333/62, 333/64, 307/91, C07C317/28, 323/19, 59/72, 59/68, 59/84, 69/736, 69/738, 217/48, 217/76, 233/75, 255/54, 235/42

(According to International Patent Classification (IPC) or to both national classification and IPC)

Continuation of B. FIELDS SEARCHED

Minimum Documentation Searched (International Patent Classification (IPC))

Int.Cl⁷ 19/08, 25/00, 25/28, 27/02, 35/00, 37/08, 43/00, C07D277/42, 277/64, 277/74, 277/84, 277/24, 471/04, C07D333/54, 333/56, 209/12, 333/62, 333/64, 307/91, C07C317/28, 323/19, 59/72, 59/68, 59/84, 69/736, 69/738, 217/48, 217/76, 233/75, 255/54, 235/42

Minimum documentation searched (classification system followed by classification symbols)

Continuation of Box No. I-2 of continuation of first sheet (1)

Claim 1 relates to a GPR40 receptor function controlling agent which contains as the active ingredient a compound "having an aromatic ring and a group capable of releasing a cation". Although there are a great number of compounds "having an aromatic ring and a group capable of releasing a cation", only part of such compounds are disclosed in the meaning within PCT Article 5 and thus this claim is not fully supported in the meaning within PCT Article 6. The same applies to claims 2 to 9 depending on claim 1, though the compounds are slightly specified in claims 2 to 7. Although inventions using compounds "having an aromatic ring and a group capable of releasing a cation" are described in claims 36 to 38, only part of such compounds are disclosed in the meaning within PCT Article 5 and thus these claims are not fully supported in the meaning within PCT Article 6 too.

Although claim 10 relates to a compound of the general formula (I-1), Xa in this general formula is specified as "a spacer other than an alkylene group" and, therefore, involves a great number of compounds. (In other words, the compound is specified by nothing but the partial structure alone). However, only part of such compounds are disclosed in the meaning within PCT Article 5 and thus this claim is not fully supported in the meaning within PCT Article 6. The same applies to claims 11 and 12 depending on claim 10, though the compounds are slightly specified therein. The description on "spacer" is given in claim 28 too and only part of such compounds are disclosed in the meaning within PCT Article 5 and thus this claim is not fully supported in the meaning within PCT Article 6.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/14139

Concerning claims 1 to 9 and 36 to 38, therefore, the search was made on the assumption of relating to the compounds specifically cited in the description. Concerning Xa in the general formula (I-1) in claims 10 to 12, the search was made on the compounds wherein Xa is specifically cited in the description. Concerning E¹ in the general formula (I-4) in claims 28 to 31, the search was made on the compounds wherein E¹ is specifically cited in the description. The remaining claims were completely searched.